وافق مجلس قسم الفيزياء الطارىء بتاريخ ٣١/ ١٠ /٢٠٢٠م على تشكيل الفريق الأكاديمى من خمس أعضاء لاعداد برنامج الفيزياء المتقدم للأعتماد والآتى أسمائهم :-

١- ا.د/ وائل عبده المحسن رمضان (مدير البرنامج)

٢- ا.م.د/ ابراهيم ابراهيم بحيرى (منسق البرنامج)

د/ مى محمود الشبعان (منسق الجودة)

كما وافق مجلس قسم الفيزياء الطارىء بتاريخ ٣١/ ١٠ /٢٠٢٠م على رؤية ورسالة وأهداف برنامج الفيزياء (ساعات معتمدة) كالتالى :-

١- الرؤية :-

تقديم برنامج مميز لطلاب الفيزياء يؤهلهم تأهيلا جيدا على المستويين العلمى والعملى .

Providing a high- standard physics teaching program for physics students to become well-qualified undergraduates on both the scientific and practical levels.

٢-الرسالة :-

تعليم طلاب برنامج الفيزياء المفاهيم الأساسية لعلم الفيزياء وتطبيقاته وتأهيلهم كمشاركين فى خدمة المجتمع .

Educating the undergraduate physics students to understand the basic concepts of physics and its applications, and become active participants in serving the society.

٣-الأهداف :-

١٠١٠١

التعرف على تطور علم الفيزياء على مر التاريخ وخاصة على المفاهيم والنظريات والتجارب التى ساعدت فى فهم أعمق للطبيعة .

٢٠١٠١

معرفة ارتباط تقدم علم الفيزياء بنظريات جديدة وتجارب مبتكرة مهدت لفتح الباب أمام الفيزياء الحديثة واستبدال المفاهيم الكلاسكية بالمفاهيم الجديدة.

٣٠١٠١

تأهيل الطلاب ليكونوا دراسيين مستقلين ذوى مهارة فى الحصول على المعلومات الصحيحة من مصادرها الموثوقة .

٤٠١٠١

أن يدرك الطلاب أهمية الفيزيائيين ودورهم المؤثر فى المجتمع وفى العالم ككل .

٥٠١٠١

المشاركة بأفكار جديدة وتقنيات مبتكرة تخدم المجتمع والبيئة خاصة فى مجال الطاقة والحفاظ على سلامة البيئة .

1.1 The physics program main aims are to:

١,١ – الأهداف العامة للبرنامج:

1001 Provide a satisfying degree of knowledge of the progress of physics through the human history and to understand the milestone ideas of vital experiments of physics that changed the way of understanding nature.

1001 Gain a fair degree of exposition and understanding theories and experiments that were proposed to interpret phenomena in both classical and quantum aspects of the universe.

1.1.3 Provide the necessary mental and practical skills such as independent and scientific thinking, mathematical skills, effective use of methods, techniques, information technology skills, practical and hands –on expertise in lab work to be an active physics teacher and scientific researcher.

1.1.4 Appreciate the responsibility of the physicists and their crucial role in society and in the world affairs at large.

1.1.5 Participate in developing bright ideas and proposals to serve the society in handling problems in technology, hazards- removal, new energy resources and to spread the appreciation of physics and its impact on

scientific thinking in real life issues.

- **وأيضا وافق مجلس قسم الفيزياء الطارىء بتاريخ ٣١/ ١٠ /٢٠٢٠م على تبني المعايير الأكادمية المرجعية القومية الخاصة بالهيئة القومية لضمان الجودة و الإعتماد لبرنامج الفيزياء(The academic standards of the supreme council of Egyptian Universities [NARS]) كمعايير أكاديمية لبرنامج بكالوريوس العلوم تخصص الفيزياء بنظام الساعات المعتمدة من مجلس قسم الفيزياء بعد مراجعتها والأطلاع عليها .**

1.2- المخرجات التعليمية المستهدفة من البرنامج :

١,٢ – مواصفات الخريج:

1.2 General attributes of the graduate of the physics program are to:

1.2.1 Recognize the role of Basic Sciences in the development of society.

1.2.2 Develop scientific approaches that meet community needs considering

1.2.3 economic, environmental, social, ethical, and safety requirements.

1.2.4 Utilize scientific facts and theories to analyse and interpret practical data.

1.2.5 Collect, analyse, and present data using appropriate formats and techniques.

1.2.6 Postulate concepts and choose appropriate solutions to solve problems on scientific basis.

1.2.7 Apply information technology relevant to the field effectively.

1.2.8 Participate in multi-disciplinary teamwork and be flexible for adaptation, decision making and working under contradictory conditions as well as exhibiting the sense of beauty and neatness.

1.2.9 Adopt self and long life-learning and participate effectively in research activities.

1.2.10 Deal with scientific data in Arabic, English or other languages.

1.2.11 Demonstrate a good basic knowledge of structural and functional aspects of physical systems at many spatial scales, from single molecule to the whole system.

1.2.12 Connect fundamental ideas about the physical behaviour of matter and energy to system's structure and function.

١,٣ – المعايير الأكادمية للبرنامج:

تم تبني المعايير الأكادمية المرجعية القومية الخاصة بالهيئة القومية لضمان الجودة و الإعتماد لبرنامج الفيزياء(The academic standards of the supreme council of Egyptian Universities [NARS]) من مجلس قسم الفيزياء بعد مراجعتها و الإطلاع عليها.

٢- المخرجات التعليمية المستهدفة من البرنامج :

2.1 – المعرفة والفهم:

2.1 The physics graduate should acquire a good background of necessary knowledge and a fair degree of understanding of the basic physics concepts. In particular, the student should be able to:

a1 Recognize the basic facts, concepts and principles of Physics, Mathematics, and Chemistry.

a2 Identify the milestone theories and experiments in physics and related sciences.

a3 Recognize the physical mechanisms underlying the diverse natural phenomena.

a4 List the necessary terminology, nomenclature and systems of units in physics.

a5 Identify theories and methods for analyzing and interpreting scientific data.

a6 Recognize the progress of physics through history.

a7 Recognize the impact of physics on society and environment.

a8 Identify the macroscopic and microscopic aspects of matter in different forms and phases.

a9 Acquire knowledge of basic differences between classical, quantum physics and non- linear physics.

a10 Acquire knowledge of crucial importance

a11 Make use of mathematical physics in analyzing real physics problems.

a12 explain the basic principles of biophysics, nano material physics, and their applications in real life.

a13 discuss the theoretical and practical aspects of nuclear, reactor, atomic physics and elementary particles.

٢,٢ – القدرة الذهنية:

2.2 The physics graduates upon completing this program will be able to:

b1. Recognize the working physical laws and their symmetry in diverse areas of physics.

b2. Manipulate interpret qualitatively and quantitatively scientific data.

b3. Develop lines of argument and appropriate judgments in accordance with scientific b4. theories and concepts of natural sciences.

b5. Propose mechanisms for handling scientific problems.

b6. Review appropriate methods to test scientific hypotheses.

b7. Utilize appropriate theories of physics to explain physical phenomena.

b8. Apply appropriate physical principles for analyzing system components.

b9. Deduce optimum solutions for mathematical and physical problems using analytical thinking.

المهارات:

2.3 – مهارات مهنية وعملية

2.3 The physics graduates upon completing this program will be able to:

c1. Use scientific literature effectively, compare results, and check laboratory equipment for effectively analyzing the investigated data.

c2. Apply the rules of scientific ethics in teaching and research tasks.

c3. Develop a certain degree of versatility in approaching and solving scientific problems.

c4. Identify flaws and inconsistencies in scientific data and/or postulates.

c5. Use the methods and tools of mathematics in setting up new hypotheses, analyzing and interpreting data.

c6. Apply physics in real life problems.

c7. Use effectively accepted systems of units, terminology, abbreviations and tools for preparing figures and tables to exhibit data.

c8. Present theoretical and experimental results in appropriate scientific reports.

٢,٤ – مهارات العامة و المنتقلة:

2.4 The physics graduates must be able to:

d1. Use information and communication technology effectively.

d2. Identify his/her rights and responsibilities as a member of a research / teaching team and as a member of the scientific community at large.

d3. Think independently even in teamwork.

d4. Engage in teamwork and manage time effectively.

d5. Respect community ethics traditions and moral values.

d6. Develop methods for short- and long-term self-learning of language and communication skills.

d7. Apply the scientific approach, whenever applicable in an effective manner.

d8. Respect the rules of the scientific community, e.g. property and publication rights.

d9. Exhibit the sense of beauty and neatness in all statements, actions and community activities with fellow scientists.

القائم بتسيير أعمال مجلس القسم

أ.د. مرتضي إبراهيم يوسف